

REMARKS

Claims 59-117 are currently pending in the subject application. Claims 59-64 and 68-74 are presently under consideration. Claims 65-67 and 75-117 have been withdrawn. Claims 59-64 and 68-74 are rejected. Claim 74 has been amended. Claims 59-64 have been canceled. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Amendments to the Specification

The Specification has been amended to reference a foreign application (GB App. No. 0405820.2) to which the present Application claims priority. This amendment adds no new matter.

The Specification has also been amended to update the status of a co-pending PCT application. The Specification has further been amended to correct informalities objected to by the Examiner (See Office Action, Page 4). These amendments do not add new matter.

For the reasons described above, the Specification is no longer objectionable. Accordingly, withdrawal of this objection is respectfully requested.

II. Objection to the Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4). Withdrawal of this objection is respectfully requested for at least the following reasons.

Replacement sheets and annotated sheets showing changes for Figures 4b, 6a and 6b are attached to this amendment. Figures 4b, 6a and 6b have been amended to replace reference number 406 with reference number 420. No new matter has been added. Thus, the drawings are no longer objectionable. Accordingly, withdrawal of this objection is respectfully requested.

III. Rejection of Claims 59-61, 63, 64 and 68-73 Under 35 U.S.C. § 102(b)

Claims 59-61, 63, 64 and 68-73 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Publication No. 2002/0092977 A1 to Lerber, et al. ("Lerber"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

As stated above, claims 59-61, 63 and 64 have been canceled. Thus, the rejection of claims 59-61 and 63 is now moot.

Lerber does not disclose that one or more totally internally reflecting (TIR) surfaces are provided with at least two functionalizing materials responsive at each of at least two wavelengths such that an interaction between a functionalizing material and one or more targets to be sensed is detectable as a change in absorption of an evanescent wave at a wavelength, as recited in claim 68. In rejecting the claims, the Examiner contends that paragraph [0065] of Lerber discloses "using two different grating materials responsive to different wavelengths to sense a target as a change of the absorption of the wave at the particular wavelength," (See Office Action, Page 6). Applicant's representative respectfully disagrees.

Lerber discloses employing a step change in wavelength to produce a step change in intensity of the light being launched into a cavity (e.g., a fiber; See Lerber, Par. [0063]). In Lerber, some interference occurs between the two wavelengths such that a beating exponentially decaying heterodyning signal is produced (See Lerber, Par. [0065]). In claim 68, each of the one or more TIR surfaces are provided with at least two functionalizing materials one responsive at each of the (at least two different) wavelengths. Thus, in claim 68, confidence as to the identity of characteristics of the one or more recited targets is increased since a change in absorption rate of an evanescent wave is detectable for both of the recited functionalizing materials (e.g. parallel detection; See Spec., Page 28, second paragraph). Accordingly, Lerber does not disclose the one or more TIR surfaces recited in claim 68. Thus, claim 68, as well as claims 69-73 depending therefrom, should be patentable over the cited art.

Additionally, Lerber does not disclose a sensor system wherein two functionalizing materials comprise different materials to detect a common target, as recited in claim 69. Thus, in claim 69, different functionalizing materials react with different wavelengths. Lerber explicitly

discloses that an input coupler 4 and an output coupler 5 are wavelength selective that have a maximum reflectivity at a first wavelength and a much lower reflectivity at a second wavelength (See Lerber, Par. [0065]). That is, in Lerber, both the input coupler 4 and the output coupler 5 are the same materials so as to provide the desired spectral characteristics. Conversely, the functionalizing materials recited in claim 69 comprise different materials, which react with different wavelengths. Accordingly, the input coupler 4 and the output coupler 5 disclosed in Lerber do not read on the functionalizing materials recited in claim 69. Therefore, Lerber does not anticipate claim 69.

Further still, Applicant's representative respectfully submits that the Examiner has not given claim 71 adequate patentable weight. Claim 71 recites that a TIR surface is provided with both (e.g., two) functionalizing materials. In rejecting the claims, the Examiner does not identify (nor can Applicant's representative find) any TIR surface that is provided with two functionalizing materials. Accordingly, claim 71 is not anticipated by Lerber.

For the reasons described above, claims 59-61, 63, 64 and 68-73 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claim 62 Under 35 U.S.C. §103(a)

Claim 62 has been canceled. Thus, the rejection of claim 62 is now moot.

V. Rejection of Claim 74 Under 35 U.S.C. §103(a)

Claim 74 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lerber as applied to claim 68, and further in view of what would have been obvious to one of ordinary skilled in the art at the time of invention. Claim 74 has been amended to correct minor informalities. The amendments to claim 74 are not intended to further limit claim 74 in any manner. Additionally, claim 74 depends from claim 68 and is patentable for at least the same reasons as claim 68 and for the specific elements recited therein. Accordingly, withdrawal of this rejection is respectfully requested.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

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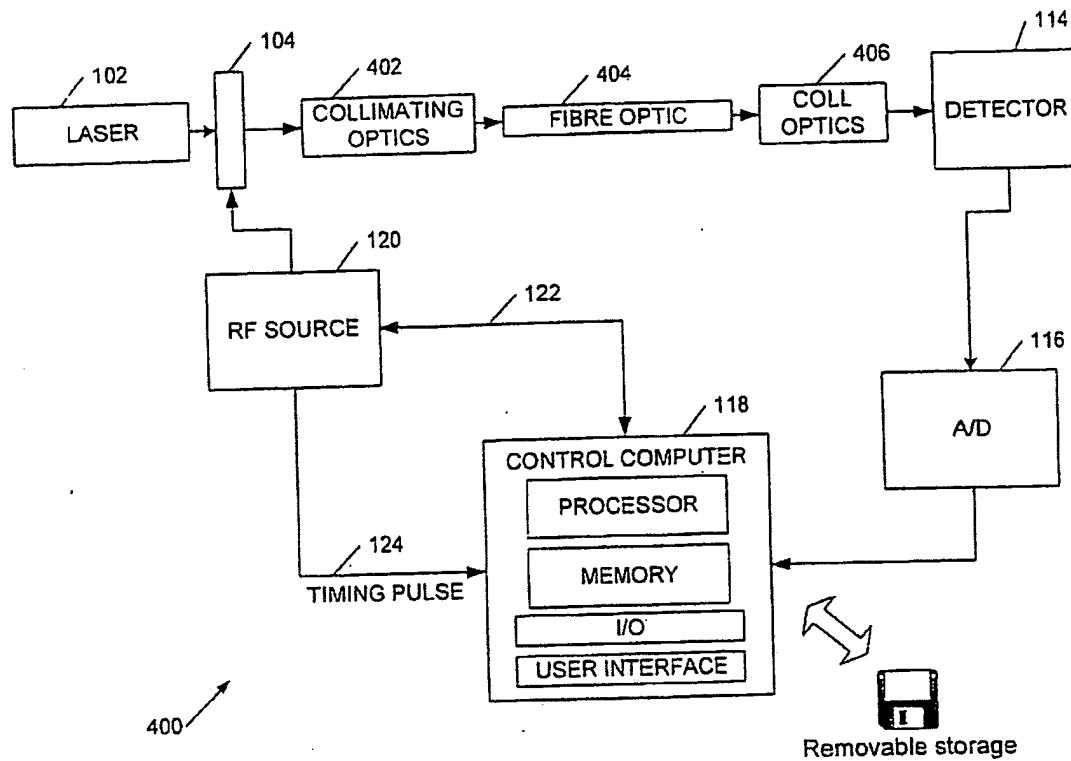


Figure 4a

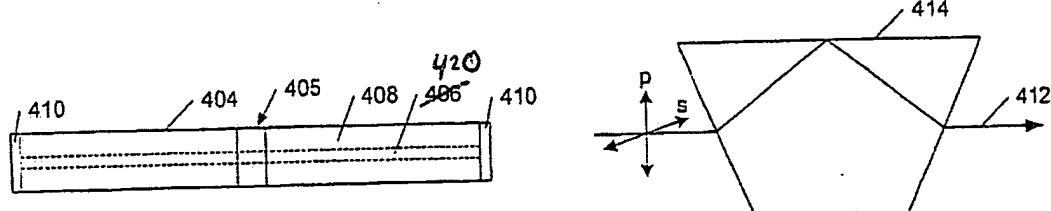


Figure 4b

Figure 4c

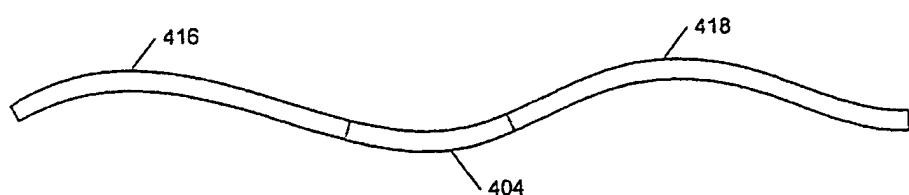


Figure 4d

ANNOTATED SHEET

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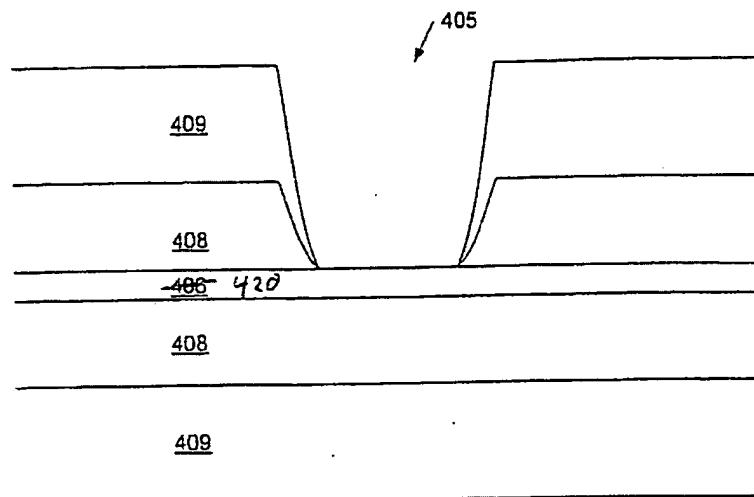


Figure 6a

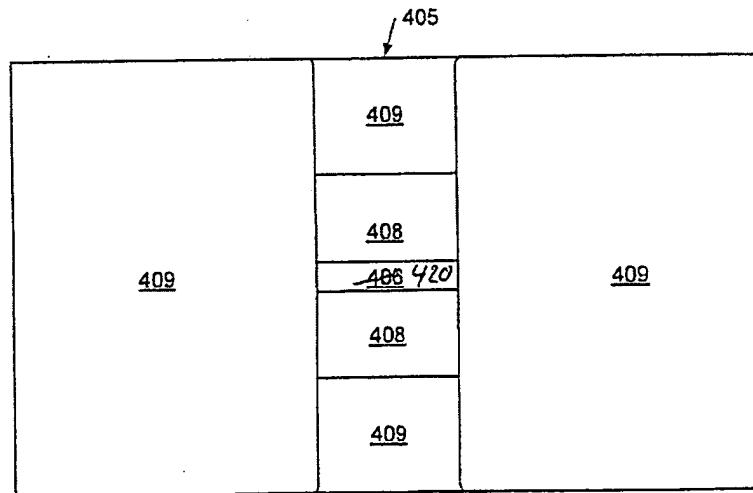


Figure 6b

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